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Richards, Donald E
Peng, Jinrong

<120> Genetic Control of Plant Growth and Development

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<140> US 09/485,529
<141> 2000-02-11

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Glu Thr Asp Ala Leu Gln Gln Val Gly Trp Lys Leu Ala Gln Phe Ala
385                 390                 395                 400

His Thr Ile Arg Val Asp Phe Gln Tyr Arg Gly Leu Val Ala Ala Thr
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Leu Ala Asp Leu Glu Pro Phe Met Leu Gln Pro Glu Gly Glu Glu Asp
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Pro Asn Glu Xaa Pro Xaa Val Ile Ala Val Asn Ser Val Phe Glu Met
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His Arg Leu Leu Ala Gln Pro Gly Ala Leu Glu Lys Val Leu Gly His
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Glu Ala Asn His Asn Ser Gly Thr Phe Leu Asp Arg Phe Thr Glu Ser
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         35                  40                  45

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     50                  55                  60

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 65                  70                  75                  80

Thr Trp Leu Asp Ser Met Leu Thr Asp Leu Asn Pro Pro Ser Ser Asn
                 85                  90                  95

Ala Glu Tyr Asp Leu Lys Ala Ile Pro Gly Asp Ala Ile Leu Asn Gln
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Phe Ala Ile Asp Ser Ala Ser Ser Ser Asn Gln Gly Gly Gly Gly Asp
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Gln Ile Gly Phe Leu Ala Val Ser Gln Ile Gly Ala Met Arg Lys Val
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            260                 265                 270

Ile Asp Phe Ser Met Ser Gln Gly Leu Gln Trp Pro Ala Leu Met Gln
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Ala Leu Ala Leu Arg Pro Gly Gly Pro Pro Val Phe Arg Leu Thr Gly
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Ile Gly Pro Pro Ala Pro Asp Asn Phe Asp Tyr Leu His Glu Val Gly
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Cys Lys Leu Ala His Leu Ala Glu Ala Ile His Val Glu Phe Glu Tyr
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Arg Gly Phe Val Ala Asn Thr Leu Ala Asp Leu Asp Ala Ser Met Leu
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Glu Leu Arg Pro Ser Glu Ile Glu Ser Val Ala Val Asn Ser Val Phe
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Glu Leu His Lys Leu Leu Gly Arg Pro Gly Ala Ile Asp Lys Val Leu
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Gly Val Val Asn Gln Ile Lys Pro Glu Ile Phe Thr Val Val Glu Gln
385                 390                 395                 400

Glu Ser Asn His Asn Ser Pro Ile Phe Leu Asp Arg Phe Thr Glu Ser
                405                 410                 415

Leu His Tyr Tyr Ser Thr Leu Phe Asp Ser Leu Glu Gly Val Pro Ser
            420                 425                 430

Gly Gln Asp Lys Val Met Ser Glu Val Tyr Leu Gly Lys Gln Ile Cys
        435                 440                 445

Asn Val Val Ala Cys Asp Gly Pro Asp Arg Val Glu Arg His Glu Thr
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Leu Ser Gln Trp Arg Asn Arg Phe Gly Ser Ala Gly Phe Ala Ala Ala
465                 470                 475                 480

His Ile Gly Ser Asn Ala Phe Lys Gln Ala Ser Met Leu Leu Ala Leu
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Phe Asn Gly Gly Glu Gly Tyr Arg Val Glu Glu Ser Asp Gly Cys Leu
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Gly Glu Ala Leu Ala Arg Arg Val Phe Arg Phe Arg Pro Gln Pro Asp
                 85                  90                  95

Ser Ser Leu Leu Asp Ala Ala Phe Ala Asp Leu Leu His Ala His Phe
            100                 105                 110

Tyr Glu Ser Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln
        115                 120                 125

Ala Ile Leu Glu Ala Phe Ala Gly Cys Arg Arg Val His Val Val Asp
    130                 135                 140

Phe Gly Ile Lys Gln Gly Met Gln Trp Pro Ala Leu Leu Gln Ala Leu
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Leu Val Ala Ala Thr Leu Ala Asp Leu Glu Pro Phe Met Leu Gln Pro
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Gly Ser Ser Gly Gly Gly Pro Ser Glu Val Ser Ser Gly Ala Ala Ala
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Ala Pro Ala Ala Ala Gly Thr Asp Gln Val Met Ser Glu Val Tyr Leu
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Gly Arg Gln Ile Cys Asn Val Val Ala Cys Glu Gly Ala Glu Arg Thr
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Glu Arg His Glu Thr Leu Gly Gln Trp Arg Asn Arg Leu Gly Asn Ala
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Gly Phe Glu Thr Val His Leu Gly Ser Asn Ala Tyr Lys Gln Ala Ser
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Thr Leu Leu Ala Leu Phe Ala Gly Gly Asp Gly Tyr Lys Val Glu Glu
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Ser Phe Ala Thr His Leu Ala Thr Asp Thr Val His Tyr Asn Pro Thr
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Asp Leu Ser Ser Trp Val Glu Ser Met Leu Ser Glu Leu Asn Ala Pro
            100                 105                 110

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        115                 120                 125

Thr Val Thr Gly Ser Gly Gly Tyr Phe Asp Leu Pro Pro Ser Val Asp
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Ser Ser Ser Ser Ile Tyr Ala Leu Arg Pro Ile Pro Ser Pro Ala Gly
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Arg Met Arg Thr Gly Gly Ser Ser Thr Ser Ser Ser Ser Ser Ser Ser
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Ser Ser Leu Gly Gly Gly Ala Arg Ser Ser Val Val Glu Ala Ala Pro
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Pro Val Ala Ala Ala Ala Asn Ala Thr Pro Ala Leu Pro Val Val Val
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Val Asp Thr Gln Glu Ala Gly Ile Arg Leu Val His Ala Leu Leu Ala
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Cys Ala Glu Ala Val Gln Gln Glu Asn Leu Ser Ala Ala Glu Ala Leu
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Lys Val Ala Ala Tyr Phe Gly Glu Ala Leu Ala Arg Arg Val Phe Arg
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Phe Arg Pro Gln Pro Asp Ser Ser Leu Leu Asp Ala Ala Phe Ala Asp
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Leu Leu His Ala His Phe Tyr Glu Ser Cys Pro Tyr Leu Lys Phe Ala
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Gln Pro Gly Ala Leu Glu Lys Val Leu Gly Thr Val Arg Ala Val Arg
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Pro Arg Ile Val Thr Val Val Glu Gln Glu Ala Asn His Asn Ser Gly
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Gly Tyr Lys Val Glu Glu Lys Glu Gly Cys Leu Thr Leu Gly Trp His
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Thr Arg Pro Leu Ile Ala Thr Ser Ala Trp Arg Leu Ala Gly Pro
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<210> 8
<211> 630
<212> PRT
<213> Zea mays

<400> 8

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Met Lys Arg Glu Tyr Gln Asp Ala Gly Gly Ser Gly Gly Asp Met Gly
  1               5                  10                  15

Ser Ser Lys Asp Lys Met Met Ala Ala Ala Ala Gly Ala Gly Glu Gln
             20                  25                  30

Glu Glu Glu Asp Val Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val
         35                  40                  45

Arg Ser Ser Asp Met Ala Asp Val Ala Gln Lys Leu Glu Gln Leu Glu
     50                  55                  60

Met Ala Met Gly Met Gly Gly Val Gly Gly Ala Gly Ala Thr Ala Asp
 65                  70                  75                  80

Asp Gly Phe Val Ser His Leu Ala Thr Asp Thr Val His Tyr Asn Pro
                 85                  90                  95

Ser Asp Leu Ser Ser Trp Val Glu Ser Met Leu Ser Glu Leu Asn Ala
            100                 105                 110

Pro Pro Ala Pro Leu Pro Pro Ala Thr Pro Ala Pro Arg Leu Ala Ser
        115                 120                 125

Thr Ser Ser Thr Val Thr Ser Gly Ala Ala Ala Gly Ala Gly Tyr Phe
    130                 135                 140

Asp Leu Pro Pro Ala Val Asp Ser Ser Ser Ser Thr Tyr Ala Leu Lys
145                 150                 155                 160

Pro Ile Pro Ser Pro Val Ala Ala Pro Ser Ala Asp Pro Ser Thr Asp
                165                 170                 175

Ser Ala Arg Glu Pro Lys Arg Met Arg Thr Gly Gly Gly Ser Thr Ser
            180                 185                 190

Ser Ser Ser Ser Ser Ser Ser Ser Met Asp Gly Gly Arg Thr Arg Ser
        195                 200                 205

Ser Val Val Glu Ala Ala Pro Pro Ala Thr Gln Ala Ser Ala Ala Ala
    210                 215                 220

Asn Gly Pro Ala Val Pro Val Val Val Val Asp Thr Gln Glu Ala Gly
225                 230                 235                 240

Ile Arg Leu Val His Ala Leu Leu Ala Cys Ala Glu Ala Val Gln Gln
                245                 250                 255

Glu Asn Phe Ser Ala Ala Glu Ala Leu Val Lys Gln Ile Pro Met Leu
            260                 265                 270
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```
Ala Ser Ser Gln Gly Gly Ala Met Arg Lys Val Ala Ala Tyr Phe Gly
        275                 280                 285

Glu Ala Leu Ala Arg Arg Val Tyr Arg Phe Arg Pro Pro Pro Asp Ser
    290                 295                 300

Ser Leu Leu Asp Ala Ala Phe Ala Asp Leu Leu His Ala His Phe Tyr
305                 310                 315                 320

Glu Ser Cys Pro Tyr Leu Lys Phe Ala His Phe Thr Ala Asn Gln Ala
                325                 330                 335

Ile Leu Glu Ala Phe Ala Gly Cys Arg Arg Val His Val Val Asp Phe
            340                 345                 350

Gly Ile Lys Gln Gly Met Gln Trp Pro Ala Leu Leu Gln Ala Leu Ala
        355                 360                 365

Leu Arg Pro Gly Gly Pro Pro Ser Phe Arg Leu Thr Gly Val Gly Pro
    370                 375                 380

Pro Gln Pro Asp Glu Thr Asp Ala Leu Gln Gln Val Gly Trp Lys Leu
385                 390                 395                 400

Ala Gln Phe Ala His Thr Ile Arg Val Asp Phe Gln Tyr Arg Gly Leu
                405                 410                 415

Val Ala Ala Thr Leu Ala Asp Leu Glu Pro Phe Met Leu Gln Pro Glu
            420                 425                 430

Gly Asp Asp Thr Asp Asp Glu Pro Glu Val Ile Ala Val Asn Ser Val
        435                 440                 445

Phe Glu Leu His Arg Leu Leu Ala Gln Pro Gly Ala Leu Glu Lys Val
    450                 455                 460

Leu Gly Thr Val Arg Ala Val Arg Pro Arg Ile Val Thr Val Val Glu
465                 470                 475                 480

Gln Glu Ala Asn His Asn Ser Gly Thr Phe Leu Asp Arg Phe Thr Glu
                485                 490                 495

Ser Leu His Tyr Tyr Ser Thr Met Phe Asp Ser Leu Glu Gly Ala Gly
            500                 505                 510

Ala Gly Ser Gly Gln Ser Thr Asp Ala Ser Pro Ala Ala Ala Gly Gly
        515                 520                 525

Thr Asp Gln Val Met Ser Glu Val Tyr Leu Gly Arg Gln Ile Cys Asn
    530                 535                 540

Val Val Ala Cys Glu Gly Ala Glu Arg Thr Glu Arg His Glu Thr Leu
545                 550                 555                 560

Gly Gln Trp Arg Ser Arg Leu Gly Gly Ser Gly Phe Ala Pro Val His
                565                 570                 575
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```
Leu Gly Ser Asn Ala Tyr Lys Gln Ala Ser Thr Leu Leu Ala Leu Phe
            580                 585                 590

Ala Gly Gly Asp Gly Tyr Arg Val Glu Glu Lys Asp Gly Cys Leu Thr
        595                 600                 605

Leu Gly Trp His Thr Arg Pro Leu Ile Ala Thr Ser Ala Trp Arg Val
    610                 615                 620

Ala Ala Ala Ala Ala Pro
625                 630
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<210> 9
<211> 100
<212> PRT
<213> Zea mays

<400> 9

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Tyr Gln Asp Ala Gly Gly Ser Gly Gly Asp Met Gly Ser Ser Lys Asp
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Lys Met Met Ala Ala Ala Ala Gly Ala Gly Glu Gln Glu Glu Glu Asp
             20                  25                  30

Val Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val Arg Ser Ser Asp
         35                  40                  45

Met Ala Gly Leu Glu Gln Leu Glu Met Ala Met Gly Met Gly Gly Val
     50                  55                  60

Gly Gly Ala Gly Ala Thr Ala Asp Asp Gly Phe Val Ser His Leu Ala
 65                  70                  75                  80

Thr Asp Thr Val His Tyr Asn Pro Ser Asp Leu Ser Ser Trp Val Glu
                85                  90                  95

Ser Met Leu Ser
            100
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<210> 10
<211> 123
<212> PRT
<213> Zea mays

<400> 10

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Ser Ser Lys Asp Lys Met Met Ala Ala Ala Ala Gly Ala Gly Glu Gln
  1               5                  10                  15

Glu Glu Glu Asp Val Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val
             20                  25                  30

Arg Ser Ser Asp Met Ala Asp Val Ala Gln Lys Leu Glu Gln Leu Glu
         35                  40                  45
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Met Ala Met Gly Met Gly Gly Val Gly Gly Ala Gly Ala Thr Ala Asp
50 55 60

Asp Gly Phe Val Ser His Leu Ser Ser Trp Val Glu Ser Met Leu Ser
65 70 75 80

Glu Leu Asn Ala Pro Pro Ala Pro Leu Pro Pro Ala Thr Pro Ala Pro
85 90 95

Arg Leu Ala Ser Thr Ser Ser Thr Val Thr Ser Gly Ala Ala Ala Gly
100 105 110

Ala Gly Tyr Phe Asp Leu Pro Pro Ala Val Asp
115 120

<210> 11
<211> 138
<212> PRT
<213> Triticum aestivum

<400> 11
Ala Ala Leu Gly Tyr Lys Val Arg Ala Ser Asp Met Ala Asp Val Ala
1 5 10 15

Gln Lys Leu Glu Gln Leu Glu Met Ala Met Gly Met Gly Gly Val Gly
20 25 30

Ala Gly Ala Ala Pro Asp Asp Ser Phe Ala Thr His Leu Ala Thr Asp
35 40 45

Thr Val His Tyr Asn Pro Thr Asp Leu Ser Ser Trp Val Glu Ser Met
50 55 60

Leu Ser Glu Leu Asn Ala Ser Thr Ser Ser Thr Val Thr Gly Ser Gly
65 70 75 80

Gly Tyr Phe Asp Leu Pro Pro Ser Val Asp Ser Ser Ser Ser Ile Tyr
85 90 95

Ala Leu Arg Pro Ile Pro Ser Pro Ala Gly Ala Thr Ala Pro Ala Asp
100 105 110

Leu Ser Ala Asp Ser Val Arg Asp Pro Lys Arg Met Arg Thr Gly Gly
115 120 125

Ser Ser Thr Ser Ser Ser Ser Ser Ser Ser Ser
130 135

<210> 12
<211> 770
<212> DNA
<213> Oryza sativa

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<210> 13
<211> 1768
<212> DNA
<213> Triticum aestivum

<400> 13
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<210> 14
<211> 2125
<212> DNA
<213> Triticum aestivum

<400> 14
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<210> 15
<211> 2255
<212> DNA
<213> Zea mays

<400> 15
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<210> 16
<211> 302
<212> DNA
<213> Zea mays

<400> 16
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ga 302

<210> 17
<211> 371
<212> DNA
<213> Zea mays

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gccgtggact c 371

<210> 18
<211> 416
<212> DNA
<213> Triticum aestivum

<400> 18
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<210> 19
<211> 725
<212> DNA
<213> Oryza sativa

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gcgctcgggt acaaggtgcg gtcgtccgac atggccgacg tcgcgcagaa nctggagcag 180
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<210> 20
<211> 258
<212> PRT
<213> Oryza sativa

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<222> (57)
<223> Xaa is unknown or other amino acid

<220>
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<222> (143)
<223> Xaa is unknown or other amino acid

<220>
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<222> (148)
<223> Xaa is unknown or other amino acid

<220>
<221> SITE
<222> (250)
<223> Xaa is unknown or other amino acid

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Glu Asp Val Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val Arg Ser
35 40 45

Ser Asp Met Ala Asp Val Ala Gln Xaa Leu Glu Gln Leu Glu Met Ala
50 55 60

Met Gly Met Gly Gly Val Ser Ala Pro Gly Ala Ala Asp Asp Gly Phe
65 70 75 80

Val Ser His Leu Ala Thr Asp Thr Val His Tyr Asn Pro Ser Asp Leu
85 90 95

Ser Ser Trp Val Glu Ser Met Leu Ser Glu Leu Lys Ala Pro Leu Pro
100 105 110

Leu Ile Pro Pro Gly Ala Ala Gly Leu Pro Ala Met Leu Ser Pro Thr
115 120 125

Ser Ser Thr Val Thr Gly Gly Gly Gly Ser Gly Phe Phe Glu Xaa Pro
130 135 140

Ala Ala Ala Xaa Ser Ser Ser Ser Thr Tyr Ala Leu Arg Pro Ile Ser
145 150 155 160

Leu Pro Val Val Ala Thr Ala Asp Pro Ser Ala Ala Asp Ser Ala Arg
165 170 175

Asp Thr Lys Arg Met Arg Thr Gly Gly Gly Ser Thr Ser Ser Ser Ser
180 185 190

Ser Ser Ser Ser Ser Leu Gly Gly Gly Ala Ser Arg Gly Ser Val Val
195 200 205

Glu Ala Ala Pro Pro Ala Thr Gln Gly Ala Ala Ala Ala Asn Ala Pro
210 215 220

Ala Val Pro Val Val Val Val Asp Thr Gln Glu Glu Glu Ala Gly Ile
225 230 235 240

Arg Leu Val His Ala Leu Leu Ala Cys Xaa Glu Ala Val Gln Gln Glu
245 250 255

Asn Phe

<210> 21
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<210> 22
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<220>
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<400> 22
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<210> 23
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<220>
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<210> 24
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<400> 28
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<210> 29
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<210> 32
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<210> 33
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<210> 34
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<210> 37
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<210> 38
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<400> 39
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<210> 40
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<210> 43
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<210> 45
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<400> 46
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<210> 48
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<210> 49
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<210> 54
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<220>
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<210> 55
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<220>
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<400> 55
ttgggtcgag agcatgctgt cggag 25

<210> 56
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<212> PRT
<213> Triticum aestivum

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1 5 10 15

Ala Asp Val Ala Gln Lys Leu Glu Gln Leu Glu
20 25

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aggagaacct ctccgccgcg gaggcgctgg tgaagcagat acccttgctg gccgcgtccc 180
agggcggcgc gatgcgcaag gtcgccgcct acttcggcga ggccctcgcc cgccgcgtct 240
tccgcttccg cccgcagccg gacagctccc tcctcgacgc cgccttcgcc gacctcctcc 300
acgcgcactt ctacgagtcc tgcccctacc tcaagttcgc gcacttcacc gccaaccagg 360
ccatcctgga ggcgttcgcc ggctgccgcc gcgtgcacgt cgtcgacttc ggcatcaagc 420
aggggatgca gtggcccgca cttctccagg ccctcgccct ccgtcccggc ggccctccct 480
cgttccgcct caccggcgtc ggcccccccgc agccggacga gaccgacgcc ctgcagcagg 540
tgggctggaa gctcgcccag ttcgcgcaca ccatccgcgt cgacttccag taccgcggcc 600
tcgtcgccgc cacgctcgcg gacctggagc cgttcatgct gcagccggag ggcgaggagg 660
acccgaacga aganccccgan gtaatcgccg tcaactcagt cttcgagatg caccggctgc 720
tcgcgcagcc cggcgccctg gaaaaggttc ttgggcaccg tgcgcccccg tgcggcccag 780
aattcntcac cgtggtggaa acaggaggca aatcacaact ccggcacatt cctggaccgc 840
ttcaccgagt ctctgcacta ctactccacc atgttcgatt ccctcgaggg cggcagctcc 900
ggcggcggcc catccgaagt ctcatcgggg gctgctgctg ctcctgccgc cgccggcacg 960
gaccaggtca tntccgaggt gtacctcggc cggcagatct gcaacgtggt ggcctgcgag 1020
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gccgggttcg agaccgtcca cctgggctcc aatgcctaca agcaggcgan cacgctgctg 1140

gcgctcttcg ccggcggcga acggctacan gtggaagaaa aggaaggctg cctgacgctg 1200
gggttgcaca cnccccccctg attgccacct cggcatggcg cctggccggg ccgtgatctc 1260
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ccgccccggc tctccggcga acgcacgcac gcacgcactt gaagaagaag aagctaaatg 1380
tcatgtcagt gagcgctgaa ttgcagcgac cggctacgat cgatcgggct acgggtggtt 1440
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tgtagtaatg taatcccttc ttcgttccca gttctccacc gcctccatga tcacccgtaa 1560
aactcctaag ccctattatt actactatta tgtttaaatg tctattattg ctatgtgtaa 1620
ttcctccaac cgctcatatc aaaataagca cgggccggaa aaaaaaaaaa aaaaaaaaaa 1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1740
aaaaaa 1746

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gcacttctac nagtcctgcc cctacctcaa gttcgcgcac ttcaccgcca attaggccat 180
cctggaggcg ttcgccggct gccgccgcgt gcacgtcgtc gacttcggca tcaagcaggg 240
gatgcagtgg cccgcacttc tccaggccct cgccctccgt cccggcggcc ctccctcgtt 300
ccgcctcacc ggcgtcggcc ccccgcagcc gg 332

<210> 59
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ggaggccggg attcggntgg tncacgcgct gctggngtgc gnggagnccg tgcagcagga 180
gaacctctcc gccgcggagg cgctngtgaa gnagataccc ntgctggccg agtcccaggg 240
cggcgagatg ngcaaggtng cagcttactt ngnagangcc ctcgcccgcn gagtgattcc 300
acttancgcc tgcagccgga nagctccgtc ctcgaanccg cnttngccga cctcctccac 360
gngcacntnt acgagtc 377

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gccgcggcca acgcgacgcc cgcgctgccg gtcgtcgtgg tcgacacgca ggaggccggg 120
attcggatgg tgcacgcgct gntggcgtgc gcggaggccg tgaaacagtt gaaggnccnc 180
gcctnnnnnc ncacaanntg aaagccccgn g 211

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ggcccccccgc agccggacga gaccgacgcc ctgcancagg tgggctggaa gctcgcccag 180
ttcgcgcaca ccatccgcgt cgacttccan taccgtggcc tcgtcgccgc cacgctcgcg 240
gacctggagc cgttcatgct gcanccggag ggcgaggagg acccgaacga cggagcccga 300
ggtaatcgcc gtcaactcag tcttcgagat gcaccgggct gctcncgcan cccggcgacn 360
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tcatcggggg ctgctgctgc tcctgccgcc gccggcacgg accatgtcat gtccgangtg 180
tacctcggcc ggcagatctg caacgtggtg gcctgcgagg gggcggagcg cacantancg 240
ccacgcagac nctgggccag tggcgtgaac cggctgggca acgccnggtt cannnnccgt 300
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gcacgcacgc acgcacttgg aagaagaana agctaaatgt catgtcagtg agcgctgaat 180
tgcaacgacc ggctacgatc gatcgggcta cgggtggttc cgtccgtctg gcgtgaagag 240
gtggatggac gacgaactcc ganccgacca ccaccggcat gtagtaatgt aatcccttct 300
tcgttcccag ttctccaccg cctccatgga tcacccgtaa aactcctaag ccctaattat 360
nnactaacta attatgtttt aaaatgttct aattaattgg ctatgttgta atncctccaa 420
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ttgnaaaatt naaatngaaa tttttggttn c 511

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acgacaggtt ngccacccgc nggccgcgga cacngtgcan tacaacccca cngacntgtc 180
gtcttgggtc gagagcatgc tgtcggagct aaangagccg cngccgcccc tcccgcccgc 240
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gcngcccccn agganagatt ggccacccac ttagcaagtg ganaccgtgg attacnaccc 180
cacagacctg tcgtggttgg gtttgagagc gtggtgtggg agctgaacgg gcngcggcgt 240
gcccctcccg cccgccccgc agctcaacgc ctccacctcc tccaccgtac acgggcagcg 300
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ttggccagag atagatagag aggcgaggta gctcgcggat catgaagcgg gagtaccagg 180
acgccggagg gagcggcggc ggcggtggcg gcatgggttc gtccgaggac aagatgatgg 240
tgtcggcggc ggcgggggag ggggaggagg tggacgagct gctggcggcg ctcgggtaca 300
aggtgcgcgc ctccgacatg gcggacgtgg cgcagaagct ggagcagctc gagatggcca 360
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ttatgtntaa ntgtctatta ttgctangtg taattcctcc aaccgctcat atcaaaataa 180
gcacgggccg gactttgtta ncagctccaa tgagaatgaa atgaattttg tacgcaaggc 240
acgtccaaaa ctgggctgag ctttgttctg ttctgttatg ttcatggtgc tcactgctct 300
gatgaacatg atggtgcctc caatggtggc tttgcaattg ttgaaacgtt tggcttgggg 360
gacttgngtg ggtgggtgca tggggatgaa tattcacatc nccggattaa aattaagcca 420
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tcggcggcgg cgggggacgg ggaggaggtg cacaacnttt nggcgggact cgngtaccac 180
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tcgccaccca cctcgccacg gacaccggca cacaacccca ccgacctgtc gtcttgggtc 180
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cgccgccttc gccgacctcc tccacgcgca cttctacgag tcctgccccc acctcaagtt 180
cgcgcacttc accgccaacc aggccatcct ggaggcgttc gccggctgcc gccgcgtgca 240
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cccgcgctgc cggtcgtcgt ggtcgacacg caggaggccg ggattcggat ggtgcacgcg 360
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gagcgctgaa ttgcancgac cggctacgat cgatcgggct acgggtggtt ccgtccgtct 240
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taatcccttc ttcgttccca gtttctccac cgcctccatg atcaccccgt aaaactccta 360
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nacaggtcgg tggggttgta gtgcacggtg tccgtggcga gggggtggcn aanctgtcgt 180
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ggaggcgttg agctgcgggg cgggcgggag gggcagcngc tgcacgttna gctcccacac 180
cacgtctctc aacccaacca cgacncgtct gtggggtngt aatncacggt ntccctngct 240
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ggaggcgcgc accttgtacc cgagcgccgc cagcagcncg nccacctcct ccccctcccc 180
cgccgccgcc gacaccatca tcttgtcctc ggacganccc atgccgccac cgccgccgcc 240
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attgctangt gtaattcctc caaccgctca tatcaaaata agcacgggcc ggactttgtt 180
agcagctcca atgagaatga aatgaatttt gtacgcaagg cacgtccaaa actgggctga 240
gctttgttct gttctgttat gttcatggtg ctcactgctc tgatgaacat gatggtgcct 300

ccaatgggtg gctttgcaat tgttgaacgt tttggcttgg gggacttggt gnntggtgca 360
tgggaatgaa nattccacat ccncnggaat taaaattagc ccatcccg 408

<210> 78
<211> 84
<212> PRT
<213> Arabidopsis thaliana

<400> 78
Met Lys Arg Asp His His His His His Gln Asp Lys Lys Thr Met Met
1 5 10 15

Met Asn Glu Glu Asp Asp Gly Asn Gly Met Asp Glu Leu Leu Ala Val
20 25 30

Leu Gly Tyr Lys Val Arg Ser Ser Glu Met Ala Asp Val Ala Gln Lys
35 40 45

Leu Glu Gln Leu Glu Val Met Met Ser Asn Val Gln Glu Asp Asp Leu
50 55 60

Ser Gln Leu Ala Thr Glu Thr Val His Tyr Asn Pro Ala Glu Leu Tyr
65 70 75 80

Thr Trp Leu Asp

<210> 79
<211> 87
<212> PRT
<213> Oryza sativa

<220>
<221> SITE
<222> (26)
<223> Xaa is unknown or other amino acid

<220>
<221> SITE
<222> (31)
<223> Xaa is unknown or other amino acid

<400> 79
Glu Ala Gly Gly Ser Ser Gly Gly Gly Ser Ser Ala Asp Met Gly Ser
1 5 10 15

Cys Lys Asp Lys Val Met Ala Gly Ala Xaa Gly Glu Glu Glu Xaa Val
20 25 30

Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val Arg Ser Ser Asp Met
35 40 45

Ala Asp Val Ala Gln Lys Leu Glu Gln Leu Glu Met Ala Met Gly Met
50 55 60

Gly Gly Val Thr Pro Pro Ala Gln Arg Met Thr Gly Ser Cys Arg Thr
65 70 75 80

Trp Pro Arg Thr Lys Phe Ile
85

<210> 80
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 80
ggcgatgaca cggatgacg 19

<210> 81
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 81
cttgcgcatg gcaccgccct gcgacgaag 29

<210> 82
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 82
ccagctaata atggcttgcg cgcctcg 27

<210> 83
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 83
tatcccagaa ccgaaaccga g 21

<210> 84
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 84
cggcgtcttg gtactcgcgc ttcatg 26

<210> 85
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 85
tgggctcccg cgccgagtcc gtggac 26

<210> 86
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 86
ctccaagcct cttgcgctga ccgagatcga g 31

<210> 87
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 87
tccacaggct caccagtcac caacatcaat c 31

<210> 88
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 88
acggtactgg aagtccacgc ggatggtgtg 30

<210> 89
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 89
cgcacaccat ccgcgtggac ttccagtac 29

<210> 90
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 90
ctcggccggc agatctgcaa cgtggtg 27

<210> 91
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 91
ttgtgacggt ggacgatgtg gacgcgagcc ttg 33

<210> 92
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 92
ggacgctgcg acaaaccgtc catcgatcca ac 32

<210> 93
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 93
tccgaaatca tgaagcgcga gtaccaagac 30

<210> 94
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 94
tcgggtacaa ggtgcgttcg tcggatatg 29

<210> 95
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 95
atgaagcgcg agtaccaaga c 21

<210> 96
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 96
gtgtgccttg atgcggtcca gaag 24

<210> 97
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 97
aaccaccccct ccctgatcac ggag 24

<210> 98
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 98
cactaggagc tccgtggtcg aagctg 26

<210> 99
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 99
gctgcgcaag aagccggtgc agctc 25

<210> 100
<211> 22
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 100
agtacacttc cgacatgact tg 22

<210> 101
<211> 4
<212> PRT
<213> Zea mays

<400> 101
Val Ala Gln Lys
1

<210> 102
<211> 12
<212> PRT
<213> Zea mays

<400> 102
Leu Ala Thr Asp Thr Val His Tyr Asn Pro Ser Asp
1 5 10

<210> 103
<211> 13
<212> PRT
<213> Triticum aestivum

<400> 103
Leu Asn Ala Pro Pro Pro Pro Leu Pro Pro Ala Pro Gln
1 5 10

<210> 104
<211> 17
<212> PRT
<213> Triticum aestivum

<400> 104
Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val Arg Ala Ser Asp Met
1 5 10 15

Ala

<210> 105
<211> 51
<212> DNA
<213> Triticum aestivum

<400> 105
gacgagctgc tggcggcgct cgggtacaag gtgcgcgcct ccgacatggc g 51

<210> 106
<211> 17
<212> PRT
<213> Zea mays

<400> 106
Asp Glu Leu Leu Ala Ala Leu Gly Tyr Lys Val Arg Ser Ser Asp Met
1 5 10 15

Ala

<210> 107
<211> 5
<212> PRT
<213> Arabidopsis thaliana

<400> 107
Asp Glu Leu Leu Ala
1 5

<210> 108
<211> 4
<212> PRT
<213> Arabidopsis thaliana

<400> 108
Glu Gln Leu Glu
1